

ABDOMINAL EMERGENCIES  
FROM THE VIEWPOINT OF THE GENERAL PRACTITIONER.

by

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Thesis for the Degree of M.D.



Nineteen years ago Prof. Rutherford Morison stated in an address to General Practitioners.-  
"Future progress in abdominal emergencies is to be sought for in prompt treatment, and the most important advances depend upon your care and skill; they are not to be expected from the ingenuity and daring of mere operators but from more prompt diagnosis and more vigorous action on the part of the General practitioner."

The same words might be used to-day. That much progress has been made in the Surgery of the Abdomen there is no doubt, but if the Surgeon into whose hands the patient comes for operation does not receive the patient in good time no surgical skill or brilliance of technique can be counted on to make up for the handicap of lost hours.

The life of the patient with an Acute Abdomen is in the hands of the General Practitioner.

In dealing with Abdominal conditions it is very necessary to weigh every grain of evidence bearing on the condition. Examination of the abdomen itself must of necessity be most carefully carried out. But that is not enough.

The/

The history, history of pain, its onset, type, location and radiation; history of collapse (which may have passed when one examines the patient); history of vomiting - the importance of seeing vomited matter if possible - history of action of the bowels; history of previous attacks, and - not of least importance - the sequence with which the symptoms commenced, are all of the greatest importance.

In women the menstrual history must not be omitted.

The appearance of the patient as to colour and expression of face - the anxious look of the "abdominal facies" - perspiration; the position taken up in bed - these in themselves are sometimes almost diagnostic. The temperature and pulse convey essential information in many cases - but not in all. A digital examination of the Rectum in many cases helps to clear up a doubt.

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Among the cases that may occur in everyday practice the following may be noted - Appendicitis, Gastric Ulcer, Ruptured Gastric or Duodenal Ulcer, Obstruction of the Bowel (Intussusception - Tumours - Gangrene due to interference with circulation - Impacted Gall Stone - Strangulated Hernia) Gall stones and Gall bladder inflammation, Renal calculus, Ectopic Gestation, Ovarian cyst with twisted pedicle, Rupture of an organ resulting from injury, e.g. spleen or liver, Perforated Typhoid Ulcer, Volvulus, Hernia (internal or external), Pyonephritis, Dysmenorrhoea, Acute Dyspepsia and Constipation; possibly also Henoch's Purpura should the abdominal symptoms be the first to appear.

The type of case may therefore vary greatly and the treatment and prognosis be very different - according to the type. Differential diagnosis is therefore of the greatest import. This question will be dealt with in connection with the different sections of this paper.

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The following cases are selected from notes taken over a period of some twelve years and serve to illustrate most of the types I have indicated.

First then let me state a case of Acute Appendicitis which is typical of many.

CASE I. H. McC. a Schoolboy.

14 years of age.

Complaint. Pain in abdomen and vomiting.

For three days had not been quite up to the mark, feeling a little disinclination for food.

Four hours before I saw him abdominal pain had started - started with moderate severity and steadily got worse for three hours and then commenced to improve.

When seen at 3 p.m. he appeared comfortable. His temperature was 100°, his pulse 98, regular, and of good volume, his tongue was slightly furred. Vomiting, which had now stopped, had commenced soon after the pain, and continued at intervals while the pain lasted. The Bowels had not moved this day.

There was distinct tenderness in the right iliac region and slight muscular rigidity on the same side.

Six hours later I saw him along with a Surgeon. He was still free from pain, he had had no further vomiting, /

vomiting, and he expressed himself as feeling better.

His temperature and pulse remained the same and the tenderness and rigidity were unaltered.

It was decided that it was a definite case of inflamed Appendix and immediate operation was advised.

On opening the abdomen the appendix was found inflamed, and gangrenous just at its junction with the caecum causing some difficulty in ligaturing the stump. It was obvious that in a short time - probably only a matter of hours - there would have been a rupture.

Such a case illustrates the advisability of removing the Appendix when a definite diagnosis of inflammation has been made. That operation should be early the above case also illustrates. A delay "till to-morrow morning" to please the patient or the relatives who think they see an improvement may be a fatal error. That stage of apparent improvement should be noted; with reasonable care in the examination of the patient and enquiry into the history the apparent improvement is not likely to lead the doctor astray.

CASE 2. W.A. a Warehouseman, age 28.

At 5 a.m. this man was seized with a sudden onset of severe abdominal pain just after he had gone to work. Soon after the onset of the pain the bowel operated normally which somewhat relieved the pain, though it continued to come in spasms. There was no vomiting, but a feeling of nausea.

His pulse and temperature were both normal and his tongue clean when I saw him half an hour after the onset of pain.

Examination of his abdomen revealed quite distinct tenderness over McBurney's point with some localised muscular rigidity. Elsewhere the abdomen was soft and free from tenderness.

During my examination he had two spasms of apparently severe pain.

The letter of the Surgeon who operated tells the rest of the story:-

"I operated on the man whom you sent in to  
"Leith Hospital with appendicitis this morning.  
"He had a long retrocaecal appendix with a  
"constriction and some commencing inflammation at  
"its tip. It was well that we got it early as had  
"it been allowed to go on it would have been a  
"peculiarly/



"peculiarly difficult one to deal with. There was  
"no peritonitis so there should be no further cause  
"for anxiety."

Here was a case somewhat atypical. The sudden severe onset of pain suggested a ruptured Gastric or Duodenal ulcer. The tenderness and rigidity however by their position indicated Appendix.

No rapidity of pulse and no rise of temperature are certainly not usually found, but in this case only half an hour had elapsed from the time of onset till the time I saw the patient.

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CASE 3. M.Y. Schoolgirl, age 12.

\* Complaining of abdominal pain with a history of an uneasy abdomen for some months past. She had a slightly emaciated appearance, a pulse of 120 and a temperature of 103.

The abdomen moved freely with respiration. There was no tenderness but a fullness and rigidity over the right iliac region which was dull on percussion.

An enema brought away some hard lumps of faecal matter.

The history and the absence of vomiting led me astray. I thought of Tubercular Glands and decided to wait for twelve hours at any rate.

In twelve hours the temperature was normal but the pulse was 120 and "flickery" and there was now distinct tenderness over the region of the appendix.

On having her opened in hospital a large appendicular abscess was found. This was drained and the after progress was uninterrupted.

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Case 4 is so straightforward that it calls for no comment. I note it as a comparison with Case 5.

CASE 4. B.G. a girl of 23, a typist.

Complaint - abdominal pain and vomiting,  
which commenced at midday following an  
"uneasy" morning

She had a furred tongue, a pulse of 100 and a temperature of 101.

Tenderness in right iliac region and rigidity of right rectus muscle.

Operation was carried out within a few hours of onset and an inflamed appendix removed. An uninterrupted recovery followed.

CASE 5. J.H.C. age 25, a chauffeur.

Complained of abdominal pain and vomiting which had come on severely during the night, but had been preceded during the previous day by a vague abdominal uneasiness and disinclination for food.

When I saw him his pain had gone, he had a clean tongue, a pulse of 75 and a temperature of 99.5.

There was a definite though slight tenderness over the region of the appendix and slight rigidity of the right rectus muscle.

In this case both patient and relatives were very/



very loth to have any operative interference and as the condition was apparently improving I left him on the understanding that if in four hours there was not further improvement an operation would be consented to. At the expiry of this time the temperature was half a degree lower, the pulse still 75, the tongue still clean and no return of pain. The tenderness appeared to be less. A gradual improvement continued and with rest and dieting recovery was successful.

It is of interest to note that in this as in other cases of this type that have not required operation there took place a very marked slowing of the pulse when the temperature dropped to normal. Sometimes I have found it as slow as 50, this in a man whose normal pulse rate I knew to be 75.

Looking back on this case and considering it in the light of a wider experience, I consider that the non operative treatment was neither wise nor justifiable. As it turned out no disaster followed but I am of opinion that I permitted that patient to run an unnecessary risk.

The case occurred within a few days of the previous one cited (Case 4) and looking back now one sees that the only difference was in degree, and it is/

is dangerous to estimate degree by symptoms.

Under my notes of this case made at the time I have written.-

"I look upon myself as fortunate in having no further trouble; for it was really against my better judgment that no operation was performed. Certainly the case was a mild one but it is often in such apparently mild cases that danger lies; and again there is the great likelihood of a further attack in such a patient."

These remarks I believe are true and in one respect they proved themselves so, for the next case which I state is J.H.C. again four years later.

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CASE 6. J.H.C.

I was called to see this man in the forenoon and found him in bed looking fairly well and expressing himself as feeling so, and regretting having sent for me.

He told me he had had an attack of severe abdominal pain and vomiting in the early hours of the morning. This had gradually subsided and left him in a not uncomfortable condition.

His temperature was normal, his pulse good, his tongue was clean. There was no tenderness and no muscular rigidity. Not much to go on: but he had his immediate history and his past history and I "had my doubts".

In the afternoon I saw him again. A further attack of pain and vomiting had taken place between 2 and 3. The pain was described as very violent.

When I saw him the pain was coming in spasms and vomiting was recurring.

He had no rise of temperature and his pulse was good - even and normal in rate : his tongue was not dirty.

Tenderness was definite all over the belly but most definite over the right iliac region. The abdomen/



abdomen was "boardy".

I sent him straight in to hospital as an "abdominal emergency, probably an appendix".

Again the Surgeon's letter almost completes the story.-

"I have just operated on J.H.C. whom you sent in to the Infirmary this evening.

He is suffering from general Peritonitis the result of a perforated gangrenous appendix.

His condition of course is serious, but we have every hope that he will recover."

He did recover and remains fit.

With regard to the differential diagnosis of Acute Appendicitis, the condition most likely to be mistaken for it are.-

- (1) Acute Lobar Pneumonia of right base with referred abdominal pain. In such a condition the differential diagnosis may not be easy for the Pneumonia may not at this stage give rise to any pathognomonic chest signs.

There may be vomiting, there may be rigidity of right rectus muscle and there may be apparent tenderness.

The points most likely to guide in forming a correct diagnosis are.-

a./

- a. The temperature. In Pneumonia even at its commencement this is likely to be 103 to 105. In Appendicitis it is usually under 103.
- b. The breathing in Pneumonia will be rapid and probably abdominal in type. In an appendicular case it tends to be thoracic.
- c. The tenderness in these cases of Pneumonia simulating Appendicitis is more apparent than real. It is often more a skin hyperaesthesia and on deeper pressure disappears.

(2) Ruptured Gastric or Duodenal Ulcer.

It is more likely that either of these may be diagnosed as an Appendicitis than that an Appendicitis be mistaken for a ruptured Gastric or Duodenal Ulcer. Although in some cases, as Case 6, the sudden onset of severe pain indicate the possibility of dealing with one or other of these conditions.

In this case however one was dealing with a ruptured organ but it was a perforation of an Appendix Ulcer.

Sudden onset of severe pain is due to escaping visceral contents irritating the peritoneum and in cases of rupture or perforation the pain comes on with lightning like rapidity.

Rutherford/



Rutherford Morison says.-

"The causes of abdominal pain are special to the abdomen. All the viscera are insensitive to ordinary pain stimuli. They can be cut or burned or sutured and no sensation results. On the other hand, the parietal peritoneum is exquisitely sensitive, and stimulation of it produces the first type of pain; the hollow viscera respond strongly to intravisceral irritation, especially such as is produced by foreign bodies plus infection, and to tension, and this is the second cause of pain; the mesentery and attachments of the viscera are painful when dragged upon, and this is the cause of a third type of pain."

Sudden, lightning like onset of acute abdominal pain indicates the likelihood of a perforation, either of a duodenal or gastric ulcer. The previous history will prove helpful and the location of tenderness is important. The perforated ulcer with no protecting "massed" mesentery will give rise to the "Boardy" abdomen.

- (3) Ruptured Ectopic Gestation is the condition most likely to be diagnosed as either an Acute Appendicitis or a perforated Gastric Ulcer. This will be dealt with later.



- (4) An inflamed Ovary on the right side may give rise to many symptoms and signs simulating an Appendicitis particularly just at the commencement of the menstrual period when it is congested. History here is probably the most helpful guide; but the difficulty in diagnosis is often extreme.
- (5) Kidney Colic - History, Radiation of pain and Haematuria (if present) are important points in differentiating.
- (6) Cholecystitis - a condition very likely to be diagnosed as Appendicitis as in many cases the symptoms and signs are strikingly alike, especially in cases of Retrocaecal Appendix. The position of <sup>the</sup> most tender spot is as a rule over the neighbourhood of the gall bladder, but may be appreciably lower. Should the case be known to have had milder attacks of biliary colic in the past the diagnosis is clearer.
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The second series of cases with which I shall deal embraces cases of Gastric and Duodenal Ulcers.

These, as abdominal emergencies presenting points of interest and difficulty in exact diagnosis, are, one may say confined to the perforated ulcers.

The ordinary Gastric Ulcer may often cause alarming symptoms, mainly on account of the free haemorrhage and thus undoubtedly deserves to be classed as an abdominal emergency; but the diagnosis in such cases as a rule presents little difficulty.

In the case of perforation on the other hand exact diagnosis is not always easy; but a speedy diagnosis - at least a speedy diagnosis of an "acute abdomen" requiring surgical interference - is essential; for here more than in any other type of case the time factor is of importance. It may be said that a case of perforated ulcer operated upon later than seven hours from the time of rupture has a poor chance, that chance of course becoming poorer with the expiry of every minute after that time. Conversely every quarter of an hour less than seven hours materially improves the chances of a successful result.

CASE 7. J.T. a young man of 25, a gardener.

A message to call was left for me in the morning stating no urgency. By good fortune I arrived soon after midday to find that the patient was suffering from severe abdominal pain and vomiting. The history was that a violent pain had suddenly come on at 11<sup>o/c</sup> the previous night. The patient had been drinking heavily; whether the relatives were ashamed to send for a doctor when he was in that state, whether they concluded that the pain was accounted for by an overdose of alcohol or whether the patient's perception of pain was diminished by the alcohol and the normal fear of the consequences of abdominal pain in abeyance, I cannot say, but foolishly he was allowed to suffer all night without attention.

A dose of castor oil had been administered. The pain had persisted but had never been so severe as the first onset.

Vomiting had continued at frequent intervals. The temperature was 101, pulse 105 and "thready". All over the belly there was great tenderness and "boarding" of the muscles. The most definitely tender spot was just over the pylorus. Percussion gave/



gave a peculiar "dull resonance" all over. The liver dullness was much encroached upon. The breathing was thoracic and there was a pinched look about the face, though not the so markedly anxious expression associated with the "abdominal facies".

I diagnosed a perforated duodenal ulcer and arranged for immediate removal to hospital.

Again quotation of the Surgeon's letter will give most succinctly the condition as it was found on operation.

"I operated yesterday about 4.30 p.m. on your patient with the perforated ulcer, and I am very pleased that you sent him in so soon, though it was unfortunate you had not been called earlier, because the prognosis in these cases varies enormously with every hour that passes.

"At the operation I found that there was a perforated ulcer, the opening being the size of a small pea, and as far as I could judge on the gastric side of the pylorus. I have on several occasions seen ulcers on the gastric side of the pylorus, simulate in symptoms every particular of duodenal ulcer.

"There was a lot of turbid fluid with lymph, reddening of the intestines and stomach from beginning/

"beginning peritonitis, and castor oil which his  
"mother had given him. I made an opening also  
"above the pubis, and drained away not only a  
"quantity of turbid fluid, but a great deal of  
"thick material with lymph closely resembling pus.  
"I stitched the ulcer up with catgut and invaginated  
"it also with catgut, sewing the upper wound com-  
"pletely, and draining the lower one with a glass  
"tube which forms the best drainage for such cases.  
"I fear that he will have a pretty bad time to go  
"through, and the chief complication which I dread  
"is the formation of subsequent abscesses usually  
"subdiaphragmatic in character."

In this case seventeen and a half hours elapsed from the time of perforation before the operation was performed. Contrary to my expectations however recovery was satisfactory and uneventful.

The differential diagnosis between a perforated ulcer on the gastric as compared with the duodenal side of the pylorus is one that I think can be left till the abdomen is opened. It is of small moment and in most cases impossible.

In the foregoing case the point of greatest interest is the extraordinarily long time elapsing between/

between perforation and operation and I imagine the uneventful recovery in such a case is an exceptional circumstance.

CASE 8. P.S. a man of 38, was seized with sudden violent abdominal pain when at work in the middle of the day.

I saw him within three hours of the onset and found him moving restlessly about in bed with an anxious pinched and sweating countenance.

The pain came in spasms at intervals of a few minutes. He was vomiting and retching.

The bowels had not opened since the previous day.

He had no history of any previous stomach trouble.

He pointed to the umbilicus as the site of the intense pain.

He had a temperature of 102 and a fast and thready abdominal pulse.

Palpation revealed a soft abdomen except in the right iliac region where there was muscular rigidity and great tenderness.

The very sudden onset of severe pain suggested a perforated ulcer, but the localisation of the tenderness suggested appendix. I sent him to hospital with a/



a diagnosis of Acute Appendicitis. The operation however showed a perforated duodenal ulcer. A Gastroenterostomy was performed and an uneventful recovery took place.

CASE 9. J.A. a man of 52.

This man fainted at his work and was sent home. When I saw him he was collapsed with a fast and slender pulse, an anaemic countenance and an anxious expression. His temperature was 98.4.

The abdomen was soft and could be palpated all over with no tenderness arising except for a slight degree on deep pressure over the pylorus.

He had the appearance of a man who had lost blood and on enquiry I elicited that for a day or two his stools had been tarry.

An enema brought away a large foul-smelling tarry stool.

Rest and diet caused some improvement in the condition, but as he continued to pass tarry stools I advised operation and had a Gastroenterostomy performed with excellent results.

Such a case I record as an illustration of the type of emergency that may be met with, due to haemorrhage from a duodenal ulcer without perforation.

My/

My experience in such cases leads me to believe that an early Gastroenterostomy is the best line of treatment. Treated with rest and diet such cases will clear up, at least for a time, but sooner or later will cause further trouble - often by perforating, and a man with such a condition lives with the Sword of Damocles perpetually suspended over him.

In its first scene and its last the following case comes within the range of this paper and the intervening history briefly stated is I think worth noting.

CASE 10. E.A. a girl of 9.

A sudden onset of copious vomiting of blood was the first symptom.

She had vomited three times before I saw her within an hour or two of the onset and the total vomit nearly filled a small chamber pot. Except for some small portions of food it was pure blood.

The girl was blanched and frightened looking. The temperature was subnormal and the pulse small, feeble and rapid. The abdomen was soft and easily palpated and yielded a negative result except for a vague tenderness over the stomach.

The/

The following day showed malaena but there was no further vomiting. A little rise of temperature on the third day unaccompanied by any tenderness or muscular rigidity was I think explained by the ingestion of blood.

Under a very carefully regulated and slowly increasing dietary the patient made good progress and in a month was up and about.

Two weeks later the abdomen began to distend - examination showing that this was due to free fluid.

By measurements from day to day a rapid increase in fluid was apparent.

I removed with a canula a pint of clear fluid, this was all that would flow though it was obvious that it represented only a small part of the total.

During all the time of increasing fluid the patient felt well and ate well, but the motions of the bowel were foul smelling and watery.

I sent her to hospital - two months from the onset of symptoms.

She was opened and the Surgeon writes.-

"I operated to-day on the little girl with  
 "tuberculous peritonitis. There was a very large  
 "quantity of fluid in the abdomen but no adhesions  
 "and not very much evidence of diffuse tuberculous  
 "infection. I am hopeful, therefore, that she may  
 "get over it all right."

She/



She filled up with fluid again while in hospital and was tapped. After a month she returned home; still there was free fluid and this as indicated by measurements was increasing.

I gave a course of Beraneck's Tuberculin commencing with .2 cc. of dilution 6 -giving weekly doses and increasing up to .8 cc. of the same dilution and continuing with this for some weeks.

A steady improvement resulted with an ultimate complete recovery.

For a year this patient maintained good health and then, without warning, as in the first instance, a severe attack of haematemesis came on and before the haemorrhage could be checked she died.

The bleeding in this case was presumably from a tubercular gastric ulcer.

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The next series of cases illustrate Acute Obstruction from various causes; from the simple obstruction of Scybala to the complicated causation of obstruction due to impacted Gall stone, and includes such causes as Intussusception, Gangrene due to interference with circulation in Mesenteric vessels and Strangulated Hernia.

The first case of this series (Case XI of the Thesis) illustrates Simple Scybalous Obstruction.

CASE XI. A young woman, 20 years of age.

During the night abdominal pain commenced, gradually becoming more severe, followed by vomiting which became intense. The pain came in spasms and was of a "gripping nature". By morning the vomit was faecal.

She had, when I saw her in the early morning, a temperature of 99° and a pulse of 100: the pulse was fairly full and gave no thready feel.

There was general tenderness all over the abdomen and a degree of general muscular rigidity but not a "boardy abdomen".

A very definite fullness and lumpiness was felt in the left iliac region and here the tenderness was most marked. A history of constipation was definite. She had not had her bowels moved for ten days!

It seemed then that in all likelihood this lumpiness was faecal matter and that in this lay the/

the cause of the obstruction.

The bowel was cleaned with many enemata of soap and water bringing away huge quantities of hard lumpy faeces.

The symptoms subsided at once and the patient passed from a state of agony and misery to one of complete comfort in a most striking manner.

Such a case is a somewhat severe type of a really very common condition, particularly among young women. Extraordinary carelessness is often shown as to the attention paid to the bowel and it is not uncommon to find people who consider they do well if the bowel moves every fourth or fifth day.

CASE XII. G.S. a boy of 9.

This youngster presented symptoms of obstruction - though not a complete obstruction. He had some vomiting but not much, he had spasms of apparently severe pain and bearing down feeling. He felt the desire to move his bowel but little would pass except some small hard pieces about the size of a hazel nut.

The bowels had moved freely the previous day - the day before that there had been no action, but previous/



previous to that the action was said to have been regular.

He had a pulse of 84 and a temperature of 99. There was no tenderness over abdomen, and he was passing wind.

He looked ill and he looked in pain.

Digital examination per rectum showed a mass of faeces which with olive oil and soap and water enemata was dislodged and passed with considerable pain. The mass was about 4 inches long and rather more than 2 inches in diameter.

The relief was immediate and the condition cleared up.

The symptoms in this case were very suggestive of an intussusception with partial obstruction. The digital examination was really the deciding diagnostic measure. The history of regular action of the bowel was misleading - and in fact it was not the quantity of faeces in this case that caused obstruction but the size and particularly the diameter of the mass.

The next case I introduce here not because it forms any sequence with the two previous cases but because chronologically in my series it is the first of the more severe types of obstruction; but it serves well to illustrate the difference of causation of obstruction that may be found, from the simple cause of the cases quoted to the complexity of causation of the one about to be quoted.

CASE XIII. R.L. a man of 50.

In this case there was a history for some years past of "colicky" pains at intervals of varying time. A week or two or even a month might elapse with no pain and then for a few days this so-called indigestion would be in evidence.

In August 1909 a particularly severe attack of abdominal pain commenced in the early hours of the morning - pain of a gripping character coming in spasms and steadily worsening. It was accompanied by vomiting and finally by faecal vomiting.

The temperature was a little above normal and the pulse small, quick and thready.

The abdomen was tender but there was no "boardiness".

Arrangements were made for immediate operation.

The/

The patient was opened in the middle line and after some difficulty the cause of the obstruction was felt as a hard lump within the gut about eight inches above Mechel's Diverticulum. A longitudinal incision was made in the Gut and through this was brought what proved to be a Gall Stone which in size and shape resembled a beer bottle cork, but was rounded at one end and somewhat broken looking at the other.

The case then was one of impacted Gall Stone - one of those rare cases where a Gall Stone ulcerates its way through the Gall Bladder into the bowel (bound by inflammatory adhesions to the Gall Bladder). It is curious to note the distance the Stone travelled in the gut.

The recovery of the patient was uninterrupted.

CASE XIV. A case of Strangulated Hernia with some unusual points.

E.W. a woman of 36 (with a history of Chronic Nephritis) complained of severe spasms of abdominal pain which had started during the afternoon and become more severe as the day advanced. The pain was accompanied by violent retching and vomiting of bile stained fluid.

The/



The temperature in the evening when I saw her was below the normal line and the pulse 85, strong and full.

The patient had a drawn look about the face and black rings round the eyes.

The bowels had operated normally that morning.

Examination showed a lump the size of a duck's egg at the right external abdominal ring - evidently a hernia - this extended down towards the Vulva.

The lump was hard and tender and quite irreducible.

Enquiry elicited the fact that this lump had been present for 2 years, during which time it had never been back and no truss had been worn. From time to time she had had attacks of pain in the groin, particularly when stooping.

Arrangements were made for operation but as the case was in the country some little time elapsed before the Surgeon arrived and by that time (about 11 p.m.) the temperature had risen to  $99.5^{\circ}$ . The pulse remained full and strong.

The first incision showed considerable oedema of the subcutaneous tissues. On deepening the incision a loop of bowel was found much congested but apparently healthy, firmly gripped by its neck by the thickened ring.

The/

The constricting band was divided and the bowel examined. On the lower part of the loop was then seen a curious little knob of blackened, apparently gangrenous, bowel which suggested that the hernia had originally been a "Richter" and that then more bowel had come down and got strangled.

However on further investigation it turned out that the appendix was lying closely along the bowel and the little blackened knob was the end of the appendix which had become gangrenous. Evidently the appendix had slipped down along with the bowel and had become adherent to it, and when strangulation occurred either the vitality of the appendix was less or its blood supply more interfered with than that of the bowel itself.

The bowel having been replaced, the appendix was drawn well into the wound and amputated and the stump invaginated.

Unfortunately on the second day after operation signs of uraemia developed and notwithstanding every effort to combat this, including saline into the subcutaneous tissues below the breasts the patient rapidly became comatose and died the following day.

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The next two cases illustrate the not uncommon condition of intussusception, a condition not always easy to diagnose, and often misleading by the fact that intervals of quiescence occur in which there are apparently no symptoms or signs of any pathological condition. As a matter of fact these intervals are, from the point of view of diagnosis, often of great value, particularly in very young babies; for it is not uncommon to find that if the baby is asleep a warm hand can be slipped up on to the abdomen and an examination made almost as satisfactory as that under an anaesthetic. Often then the lump can be demonstrated. I do not suggest that it is advisable to wait for such an interval to demonstrate a lump in the abdomen if other signs are sufficiently definite; but it not uncommonly occurs that on arrival at the patient's house all one gets is a history of sudden onset of screaming and perhaps "bearing down", and that now the child is "better" and asleep. In such cases it is well to remember that the abdomen may be palpated carefully without waking the patient.

The passage of blood stained mucus in a child should raise the question of intussusception, more particularly if the child is under eighteen months. When/



When to this is added straining at stool with little or nothing to come, it is strongly presumptive.

If in a baby to this picture is added the history of a sudden onset of screaming without apparent cause it is almost pathognomonic.

An intussusception may sometimes by saline enemata be reduced and not infrequently reduction automatically takes place and this may occur when examining the patient under an anaesthetic.

The first case quoted below is, I think, undoubtedly one of intussusception which reduced itself.

CASE XV. Baby S. 4 months old.

History of suddenly starting screaming apparently in pain. Seized at the same time with straining down and passing some diarrhoea like matter and mucus and blood. The baby's napkin fortunately was kept and the mucus and blood visible.

Twelve hours however had elapsed between the attack and my being called, and since the original attack there had been no further symptoms.

I was able to freely palpate the abdomen and it seemed that there was, now, no pathological condition.

Further, a dose of castor oil had been administered since the attack and had acted. I watched the case for a few days but no recurrence took place.

In/

In this case I think the evidence was sufficient to justify a diagnosis of intussusception and that this had reduced itself.

The next case is a pretty typical case and serves to illustrate two special points.-

1. The intervals of comfort when the baby falls asleep.
2. The advantage of such an interval to palpate the abdomen.

CASE XVI. Baby S. 6 months.

History of child starting to scream suddenly with apparently severe pain - followed in an hour by passage of blood and mucus.

On abdominal palpation no definite lump could be felt but the straining continued and the abdominal muscles were tense.

I decided that it was a case of intussusception and that an operation was called for and proceeded to arrange accordingly.

On my return to the house after an interval of half an hour the child was sleeping and I managed to examine the abdomen without waking him.

I could then feel a distinct lump extending transversely/

transversely over the upper part of the abdomen.

When the abdomen was opened an intussusception of eight inches was found and easily reduced.

The after progress was satisfactory and uneventful.

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That cases of obstruction may be due to unusual causes and causes not absolutely diagnosable without laparotomy the following case illustrates.

CASE XVII. Case of a lad of 19, a pitman, who when at his work during the forenoon was attacked by sudden abdominal pain which he described as dull and aching, not griping and not spasmodic. He was brought home from work and then started to vomit. The vomiting was persistent, the material vomited being clear fluid.

He gave a history of four or five days constipation. His temperature was normal and his pulse 75 and strong.

There was general abdominal tenderness but most definite over the right iliac region where there was visible the scar of an operation for appendicitis performed two years previously. On the left side a loaded colon could be felt.

I felt strongly of opinion that the case was one of faecal obstruction and had enemata freely given which brought away a large quantity of faeces but with no relief of the symptoms.

Following the last enema some blood was passed.

It/

It was then decided that the abdomen should be opened forthwith. This disclosed the fact that a length of intestine measuring 6 feet was gangrenous due to thrombosis of a mesenteric artery - numerous enlarged glands were found in the abdomen. The gangrenous bowel was resected and the patient made a satisfactory recovery.

Another case that presented some difficulty of accurate diagnosis of the cause is the following - a case in which the history was of paramount importance.

CASE XVIII. A man of 48 who had a sudden onset of abdominal pain, spasmodic and griping in character and becoming steadily more severe; followed by vomiting which was persistent, the vomit consisting of bile stained fluid.

There was general tenderness over the abdomen, but most definite in the left inguinal region.

There was a history of a left inguinal strangulated hernia two years ago which was reduced by manipulation.

This case I saw along with my then chief - Dr Andrew Smith of Whickham - who diagnosed the case as one of strangulation of an old hernia in the returned Sac; which on operating proved correct and the condition was easily dealt with.

The following case is perhaps strictly outside those of actual emergencies but it has some points of interest sufficient I think to warrant its inclusion.

CASE XIX. T.G. age 50, by trade a cooper.

This man had to seek advice during my absence (during the War) and for a short period - five weeks - was attended by my deputy. He complained of pain in the abdomen and persistent vomiting. He described his pain as being an aggravating one more than severe and referred it to the region of his stomach.

The vomiting occurred usually soon after taking food, though at times he vomited when no food was in the stomach and brought up bile stained fluid.

At the expiry of five weeks I was temporarily home and in handing the case over to me the doctor who had attended expressed the view that the condition was probably a malignant growth at the pylorus.

No tumour could be felt.

The relationship of vomiting to food was not altogether suggestive of a pyloric obstruction.

There were no symptoms of any intracranial pressure.

The urine was free from albumin and there were no/



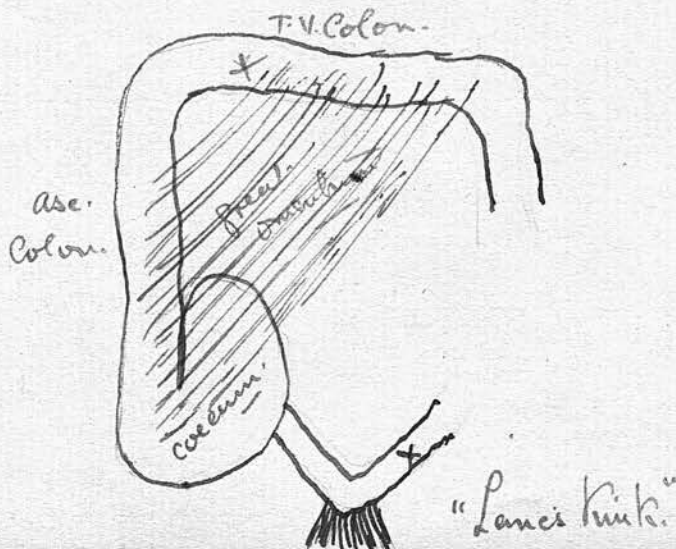
no symptoms of Chronic Bright's disease.

I inclined then to the view of my Deputy and sent the case to The Royal Infirmary, Edinburgh, where he came under the care of Mr Scot Skirving to whom I am indebted for the further particulars.

Bismuth meal and X-ray indicated that the interference with the passage of food was situated about the caecum.

Operation disclosed a high turned up distended caecum with the extremity of the great omentum not free - as it normally should be - but adherent over the front of the ascending Colon causing interference with the passage of contents - it was the condition known as "Jackson's Membrane".

In addition to this there was another band or thickening of the mesentery of the ileum causing a V-shaped kink of the ileum about 3 inches from its entrance the Caecum - the condition known as "Arbuthnot Lane's Kink".



As the whole caecum and ascending colon were loose and also atonic, Mr Scot Skirving considered it best to excise that portion between the two crosses in the diagram, anastomosing the lower end of the ileum to the transverse colon.

The patient made a good recovery and remained free from gastric<sup>d</sup> intestinal troubles.

He later however developed a fairly rapidly progressive Pulmonary Tuberculosis and died of this two years from the date of his operation.

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In reviewing these cases of obstruction the variety of the causes is striking. From the General Practitioner's point of view it is however infinitely more important to decide early that there is an obstruction and that laparotomy is called for than to attempt to diagnose with accuracy the actual cause of obstruction.

Persistent vomiting of fluid, clear or bile stained is a symptom on which to lay considerable stress.

The severity of pain and the state of the pulse do not always indicate the gravity of the condition. Case XVII - that of thrombosis of mesenteric vessels - particularly illustrates this. In this case, notwithstanding the fact that many feet of bowel were gangrenous, the patient laid little stress on pain as a symptom. He had no rise of temperature and an excellent pulse.

Vomiting - persistent vomiting of fluid - was the outstanding feature.

Pain in such cases is often absent when gangrene has occurred - since the part being dead, sensation is absent. This often accounts for the "deceptive lull" in cases of appendicitis, the appendix being found gangrenous at operation.



For the sake of an illustration of an "Acute abdomen" due to colecystitis I shall site a fairly typical case that recently occurred in my practice. It has the advantage that it illustrates the difficulty of deciding between Colecystitis and Appendicitis in those cases that have no previous Gall Stone history.

CASE XX. Mrs M. a married woman of 36.

During the night was seized with abdominal pain which she indicated as being mainly felt in the right upper portion of the umbilical region. The pain continued to come in spasms and was followed by vomiting. In the intervals between the spasms there remained a continuous dull pain.

There had been constipation for two or three days.

The general "feel" of the abdomen was not at all boardy but there was muscular rigidity on the right side and particularly over the appendicular region. There was some general tenderness but much tenderness just below the right hypochondriac region. The temperature was  $99.5^{\circ}$ , the pulse 100 but fairly full. The tongue was dirty.

It appeared that the diagnosis lay between  
Appendix/

Appendix and Gall bladder and I inclined to the view of an appendicitis. She was removed to hospital where it was found that she had a Cholecystitis, the cystic duct being blocked by a small calculus.

Recovery was uneventful.

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Cases of Renal Colic are often very acute in their onset and owing to the severity of the pain are very real emergencies. Such cases may present little difficulty of diagnosis. The radiation of pain downwards to the testicle in itself is a valuable diagnostic point. Haematuria is commonly present. The temperature does not usually rise and the pulse does not present the thready characteristic feel so usually an accompaniment of such acute conditions as perforations. The patient not infrequently complains of shivering.

The following case has the added interest that it was complicated by an inflamed appendix.

CASE XXI. G.S.P. a man of 37, by profession a school teacher: had a sudden onset of abdominal pain during the forenoon, which pain continued to come in violent spasms. There was only one vomit and that followed a dose of castor oil.

The bowels had not acted that morning but had moved on the previous day.

The temperature was not above the normal line. The pulse was strong and beat at the rate of 80 per minute.

There/



There was marked tenderness over McBurney's point.

An hour later on my second visit there was little abatement of pain but no further vomiting; the temperature was now  $99.5^{\circ}$ . There was little change in the pulse.

The tongue was "furry".

He was sent to hospital as an acute appendix.

Four days after his admission, when the symptoms had subsided, his appendix was removed and found to show signs of inflammation.

Two days after his operation he had again an acute attack of spasmodic abdominal pain.

An X-ray showed a Stone in the right ureter.

No further operation was however undertaken.

It is of interest to note that eleven months later this patient came to my consulting room one evening complaining of pain in his penis.

I found, within half an inch of the meatus of the urethra, a stone the size of a split pea which with the aid of a probe was easily removed.

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Ruptured Ectopic Gestation is in my experience a condition not frequently met with and one which is very liable to present difficulties of diagnosis and this more particularly where the history given by the patient is not wholly to be relied upon as is likely to be the case in unmarried women.

The following case is illustrative.

CASE XXII. M.B. age 25, a domestic servant.

At 6 o'clock in the evening was seized with a sudden, acute, severe pain in the abdomen, since then had continued to have pain in spasms but none so severe as the original onset.

Her pulse was 105 and had a slightly thready feel. The temperature was 99<sup>0</sup>.

She felt sick but had no vomiting.

The bowels were stated to be irregular but had operated that day.

The Menses were said to have been perfectly regular, and a normal period was just over a few days previously.

There was tenderness over the abdomen generally, but most particularly well down in the right iliac region; there was too some local muscular rigidity here.

The/

The possibility of Tubal Gestation was not forgotten but the history was misleading. Though a point in favour of a diagnosis of a ruptured extrauterine pregnancy was the very sudden and severe initial onset.

I however diagnosed acute appendicitis and sent her to hospital where that diagnosis was also accepted by the Surgeon under whom she came.

Operation however showed that it was a case of extrauterine gestation.

Rupture had taken place within the tube and between 6 and 8 ounces of blood had escaped from the end of the tube into the peritoneal cavity.

The tube was removed and so also was the appendix.

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Among abdominal emergencies mention must be made of Acute Pneumonia which may in its initial stages present a picture not easily distinguishable from a true abdominal condition.

The pain is often acute and referred wholly to the abdomen. Actual tenderness may be present over McBurney's point and not uncommonly there is vomiting. If such a condition follow an injury it is even more likely that confusion may arise and the condition be diagnosed as an abdominal one.

In one case that I attended a man sustained injuries through the overturning of a taxicab and 6 days later developed what was in all likelihood a "traumatic" pneumonia. In this case his complaint was abdominal pain of a severe character and some vomiting. The onset of the pain was sudden and "seizing" like that of a ruptured duodenal ulcer and occurred while he was going up stairs, causing him to collapse. On seeing him within an hour or two of the onset there was no rise of temperature. On the next day it rose to  $99.5^{\circ}$  and not till the third day was pneumonia diagnosed although the chest was carefully examined daily.

Some muscular rigidity of the abdomen was present but no "boarding". No area was definitely tender on palpation and these facts with the rapidity of the breathing gave the clue.

More rarely one may have to attend a case of emergency in which the symptoms are abdominal and due to poisoning. In most of such cases, even if the poison has been taken with a view to suicide, one gets a history that is definite. When however a poisonous substance has been taken with a view to cause abortion one may be able to elicit no information to assist in the diagnosis of the case.

The case below is illustrative of this.

CASE XXIII. Mrs J.K. age 35, a charwoman and a widow complained of severe abdominal pain which had started in the early hours of the morning and was accompanied by vomiting. There were also cramping pains in the muscles of the legs and arms.

She had a feeble pulse beating at 120 per min. and a subnormal temperature. Her countenance was pale but there was a degree of cyanosis about the lips and she said that when she made an attempt to get up she felt faint and giddy.

She gave a history that on the previous day at midday she had eaten tinned rabbit but as this had been freely partaken of also by three children aged respectively 16, 6 and 4 with no bad effects I do not think it can be considered the cause.


The/

The bowels were stated to have been acting regularly and the menses said to be regular. The day following her monthly period came on (whether this was a normal period or an abortion I cannot say).

For three days there was little improvement in her condition other than diminished pain and vomiting. On the fourth she began to show signs of distinct improvement, the colour returned to the face and the cyanosis disappeared from the lips and the pulse steadied.

From then on improvement was steady and no untoward symptoms occurred except for a slight rise of temperature ( $0.5^{\circ}$  above normal) from the 4th to the 7th day of illness.

It was only when improvement was definitely established that the District Nurse who was attending her learned that on the evening before I was called the patient had taken "sixpenny worth of Pennyroyal" presumably as an abortifacient. The symptoms in this case were those of an irritant poison. The effect of this poison on the bowel was masked by the fact that I ordered large doses of castor oil to obtain free action.

[ The poisonous effects of Pennyroyal are due to a volatile oil. It may act as an irritant, producing persistent vomiting. In such cases congestion of/  




of the stomach and small intestine are seen post-mortem.

In other cases shock, coma, delirium, twitching of muscles and tetanus like seizures are produced.

Numbness and tingling in the hands are also symptoms.]

The usual symptoms in most cases of "acute abdomen" are pain and vomiting and the usual outstanding signs are tenderness and muscular rigidity.

In arriving at a diagnosis it is important to learn exactly the mode of onset.

- (1) Was the initial pain of a violent lightning like nature or was it "worked up to" by less severe pain?
- (2) Since the onset <sup>been</sup> was there any change in the pain? e.g. has it got steadily worse or steadily less?
- (3) Did the vomiting come immediately after the onset of pain? and has the vomiting diminished or become more violent?
- (4) Was there collapse?

These points guide one in diagnosis.

Perforations of hollow viscera cause as a rule a violent, sudden, unheralded, onset of pain. Following the first violent onset there may be, comparatively speaking, ease.

Inflammations are heralded in often by a more gradual onset and, for a time at least, a steady worsening of symptoms.

When the pain takes a secondary place as compared with persistent vomiting, it indicates some obstructive lesion.

The state of the muscles of the abdominal wall should be carefully noted. Does the abdomen move freely with respiration? An absolutely immobile abdominal wall indicates peritonitis in all probability.

A certain degree of immobility is present in any acute abdominal condition and in these conditions the part of the abdominal wall that shows muscular spasm as felt on palpation will be the part where tenderness on pressure will be elicited and will give an indication as to the organ involved.

The temperature, the state of the tongue and the state of the pulse are all of importance, but of the three the pulse is the most important.

In doubtful cases a valuable guide - often the most valuable - is a change in the pulse rate. An increased rapidity of pulse rate indicates a condition of seriousness and a progressive condition.

One would emphasise two things that have been emphasised often. Beware of opiates and beware of purgatives unless one is sure of the condition with which/

which one is dealing.

The one will mask symptoms without in any way arresting the trouble in all the more serious conditions and the other will increase the severity of the condition by undoing what nature is attempting to do - namely to rest the parts.

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These cases which I have quoted to illustrate some of the types of abdominal emergencies are selected from notes on a number of cases over a period of twelve years.

Some are taken as giving the more classical symptoms and signs of the condition they illustrate, but most are taken to emphasise difficulties.

It will be noticed that in a proportion of the cases quoted the diagnosis was not correct or at least was not complete.

One would emphasise the importance - at least from the point of view of the General Practitioner - of deciding the more general condition. For example the importance of determining early that there is a ruptured organ though it is unnecessary to differentiate between a ruptured duodenal ulcer and a ruptured gastric ulcer. The importance of diagnosing an obstruction of the bowel though it is unnecessary and often quite impossible to diagnose the cause.

It is necessary in dealing with a case of acute obstruction to exclude Scybala and here one would lay stress on the value of a digital examination of the rectum.

Again/

Again a diagnosis of an acute inflammatory condition requiring surgical interference is more important than a definite differentiation between an acute appendix and an acute cholecystitis although in such cases the differential diagnosis is not difficult as a rule.

In all acute abdominal conditions in women careful enquiry into the menstrual history is necessary and it is well to bear in mind that in unmarried women complete reliance cannot always be placed on their statements regarding this function.

Other points illustrated in the foregoing cases that are in my opinion worthy of particular notice are.-

The risk of being misled by the apparent improvement which may take place in appendicitis - it may be the calm before the storm, in the shape of perforation and peritonitis.

Where a definite diagnosis of appendicitis is once made the safest procedure is operation and the earlier the operation the better the chance of the patient.

In conditions of intestinal obstruction a symptom to which to attach importance is persistent vomiting of fluid.

The severity of the pain and the state of the pulse are not always in such cases safe guides.

The/



The first question that will present itself for an answer in all cases of abdominal pain is.-

Does the condition come within the category of severe emergencies where surgical interference is demanded or is the condition one of less immediate moment where medical measures will suffice?

The appearance of the patient may answer this question at once - at least if it is a serious case requiring surgical interference. It does not always do to attach too much importance to the apparently "well looking" aspect of a patient who gives a history of acute abdominal pain; but much may be gathered from appearance which should always be studied and noted.

The temperature and pulse rate and type are of great value.

The answer to the question will mainly depend in the end on the examination of the abdomen. By inspection one shall learn in particular whether or not there is free movement with respiration. Palpation shall reveal, if present, muscular rigidity, tenderness or any underlying lump.

Should none of these be present the condition in all probability may be safely classed as one not requiring immediate surgical interference.